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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,632	01/04/2001	Kazuo Aoyama	10746/23	3601

26646 7590 11/30/2004

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EXAMINER

LAM, DAVID

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/754,632

Applicant(s)

AOYAMA ET AL.

Examiner

David Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-75 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-75 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 14 is/are rejected.
- 7) ☒ Claim(s) 4-13 and 15-23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-3, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kramer et al. (5,901,085).

Regarding to claims 1-3, 14, Kramer disclose a semiconductor memory device comprising: a plurality of function cells (2), being a basic unit which realizes a function; the

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plurality of function cells including a plurality of threshold elements, each of the threshold elements including means for stores a threshold value (floating gate region); and wherein a function which is realized by the function cells is determined by determining the threshold value in each of the threshold elements; a nonvolatile memory (34) for stores data for realizing the function in the function cells; and the function cells are connected by wiring which can change a connection status (connection of 4, 8, 14). *See Figures 1-3; Cols. 2-6.*

Allowable Subject Matter

3. Claims 4-13, 15-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach the above noted device and wherein the function cells including a plurality stages, each of stages including at least one threshold element.

4. The following is an examiner's statement of reasons for allowance: Claims 24-75 are allowable over the prior art of record because none of the prior art whether taken singularly or in combination, especially when these limitations are considered within the specific combination claimed, to teach: an integrated circuit comprising: a third vector, among others as claimed in independence claim 24, including voltages of an input gate electrodes at a time when the floating gate electrodes are interrupted; a circuit, among others as claimed in claim 26, which stores function configuration data for determining a function, wherein the function configuration data

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being a difference between a sum of charge amounts induced in input gate electrodes of neuron MOS transistor during performing a function processing; a selector capability, among others as claimed in claim 52, for selecting one signal among $k+1$ second input signals by using k first input signals; a third voltage, among others as claimed in claim 54, being a voltage of input terminal of the neuron MOS transistor at a time when the element is in the interrupted state; a capacitance value, among others as claimed in claim 63, being values of capacitance between input gate electrodes to which input variables are input and a floating gate electrode. Method of storing comprising step of applying voltage in a third voltage vector to input gates of the neuron MOS transistor while each of the floating gate electrodes of the neuron MOS transistor is connected to an initialization terminal, and in combination with other steps as claimed in claim 48; step of applying predetermined voltage to input gate electrode of the neuron MOS inverters, and in combination with other steps as claimed in claims 49, 50, 51; step of setting values of input gate capacitances for each of the neuron MOS inverter, between input gate electrodes from which first input signals are input and a floating gate electrode, and in combination with other steps as claimed in claims 73, 74.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Sugiyama (6,009,015) discloses a program-verify circuit and method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lam whose telephone number is 571-272-1782. The examiner can normally be reached on 6:00 – 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D. Lam

November 17, 2004



DAVID LAM
PRIMARY EXAMINER